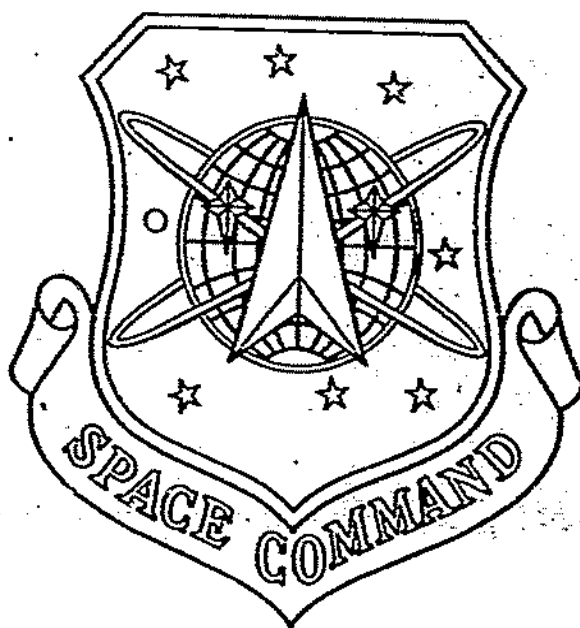


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AFSPACECOM REGULATION 55-5

OPERATIONS

SEA-LAUNCHED BALLISTIC MISSILE (SLBM) WARNING SENSORS  
TACTICAL REQUIREMENTS AND DOCTRINE (U)



17 DECEMBER 1986

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DEPARTMENT OF THE AIR FORCE  
Headquarters Air Force Space Command  
Peterson Air Force Base Colorado 80914-5001

AFSPACECOM REGULATION 55-5

17 December 1986

Operations

SEA-LAUNCHED BALLISTIC MISSILE (SLBM) WARNING SENSORS  
TACTICAL REQUIREMENTS AND DOCTRINE (U)

(U) This regulation establishes and explains operational requirements and doctrine for sea-launched ballistic missile (SLBM) sensors at Cape Cod AFS, Massachusetts (6th Missile Warning Squadron (6MWS) referred to as Otis); Beale AFB, California (7th Missile Warning Squadron (7MWS) referred to as Beale); Eldorado AFS, Texas (8th Missile Warning Squadron (8MWS) referred to as Eldorado); Robins AFB, Georgia (9th Missile Warning Squadron (9MWS) referred to as Robins); Cavalier AFS, North Dakota (10th Missile Warning Squadron (10MWS) referred to as Cavalier); and Eglin AFB, Florida (20th Missile Warning Squadron (20MWS) referred to as Eglin). It applies to HQ AFSPACECOM and subordinate SLBM units. Submit recommended changes to HQ AFSPACECOM/DOBW, Peterson AFB, Colorado 80914-5001.

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- c. (U) 496L SPACETRACK SCG, 1 July 1985.

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## Chapter 1

### MISSION, RESPONSIBILITIES, AND PRIORITIES (U)

1-1. (U) Mission Statements. The sea-launched ballistic missile (SLBM) warning sensors provide warning of an SLBM attack against the United States and Canada. The missions of the sensors are:

a. (U) PAVE PAWS (Otis, Beale, Robins, and Eldorado). Provide warning of an SLBM and intercontinental ballistic missile (ICBM) attack against the continental United States (CONUS) and southern Canada. Provide space surveillance, tracking, reporting, and limited space object identification (SOI).

b. (U) Cavalier. Provide warning and attack characterization of an SLBM and ICBM attack against the CONUS and southern Canada. Provide surveillance, tracking, reporting, and space object identification (SOI).

c. (U) Eglin. Provide warning of an SLBM attack against the CONUS and portions of southern Canada from the southern coastal waters. Provide surveillance, tracking, reporting, and space object identification (SOI).

1-2. (U) Radar Location and Description. The SLBM sensors are composed of and located at:

a. (U) PAVE PAWS. AN/FPS-115 dual-faced phased array radars are at Cape Cod AFS, Massachusetts and Beale AFB, California. AN/FPS-123 dual-faced phased array radars are at Robins AFB, Georgia and Eldorado AFS, Texas.

b. (U) Cavalier. This radar is an AN/FPQ-16 single-faced phased array radar at Cavalier AFS, North Dakota.

c. (U) Eglin. This radar is an AN/FPS-85 single-faced phased array radar at Eglin AFB, Florida.

1-3. (U) Site Operational Responsibilities. The site missile warning operations center (MWOC) crew commander (CMDR) directs operations to fulfill the missile warning and space surveillance mission requirements. The CMDR is operationally responsible to the USSPACECOM Missile Warning Center crew commander in the Cheyenne Mountain Complex (CMC) Missile Warning Center (MWC) and the USSPACECOM Space Surveillance Center crew commander in the CMC Space Surveillance Center (SSC). When the USSPACECOM Space Operations Center (SPOC), Alternate Space Surveillance Center (ASSC), or rapid emergency reconstitution (RAPIER) has control, the CMDR is responsible to comparable individuals.

1-4. (U) MWC Responsibilities. The MWC has overall responsibility for the SLBM warning systems data outputs. The MWC:

a. (U) Coordinates with the site CMDR on all operational matters.

b. (U) Informs users (including site CMDRs) of interference, solar and auroral activity, threats, or any other unusual activity.

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- c. (U) Directs alert status implemented by higher authority.
  - d. (U) Receives and acknowledges reports from the sensors.
  - e. (U) Forwards pertinent information to the sensors on launches that could penetrate their coverage area.
  - f. (U) Processes requests for downtime in accordance with ADCOMR 55-40(S).
  - g. (U) Receives operational capability (OPSCAP) status and change reports from the sensors and activates status panels and indicators as appropriate, and advises NORAD Command Post (CP) and SPOC of sensor degradation.
  - h. (U) Monitors data link status and directs VOICETELL procedures when data links to MWC fail. Informs users of data link outages and restorals.
  - i. (U) Verbally passes time critical messages when required.
  - j. (U) When the MWC receives launch and impact (L&I) data during site voice communications outages, the MWC considers the L&I data along with any supporting data to determine the system report.
  - k. (U) Directs change in mission priority as directed.
  - l. (U) Informs users of PAVE PAWS communications line outages and restorals pertaining to testing, system verification, training, and downtime.
- 1-5. (U) Operational Control. The MWC exercises operational control of the SLBM sensors. When the SPOC assumes control in accordance with CINCNORAD Operation Plan (OPlan) 3341, MWC functions are transferred to the SPOC. "MWC" means "SPOC" when the SPOC is in control or when the site cannot contact the MWC.
- 1-6. (U) Administrative Control. The Commander of Air Force Space Command exercises administrative and technical management of SLBM warning sensors. Sensors report directly to the 1st Space Wing.
- 1-7. (U) Mission Priorities. The primary mission of PAVE PAWS, Cavalier, and Eglin is the SLBM and ICBM warning mission. The space surveillance mission is subordinate to the warning mission. SLBM units ensure the space surveillance mission does not interfere with the missile warning mission. Site personnel contact the MWC to resolve any conflicts between the missile warning and space surveillance missions. In case of conflict, the MWC may authorize space surveillance support on a case-by-case basis. When a directive to support space surveillance conflicts with missile warning requirements, authentication via AKAA 2001 is required if secure communications are unavailable.

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## Chapter 2

### SITE SYSTEM REPORTING (U)

#### (U) Section A - Concept

##### 2-1. (U) General:

a. (U) Site system reporting is a human evaluation to determine if a launch and impact is generated by equipment malfunction, environment, or personnel. Equipment includes both hardware and software. Environment includes natural phenomenon as well as electromagnetic energy. Personnel encompasses deliberate or accidental action to generate launch and impact data.

b. (U) Since it is extremely difficult for a site CMDR to determine whether or not launch and impact data were generated from a missile or reentering object in track, the validity of a system report is based strictly upon verifiable sources available to the CMDR; such as observable radar performance. Site system reporting is not a threat or nonthreat assessment as to whether the data being transmitted is from a missile; it is a determination as to whether the system is working properly, malfunctioning, or it cannot be determined how the system is performing. Commander in Chief, North American Aerospace Defense Command (CINCNORAD) determines if an L&I is a threat or nonthreat.

c. (U) Site system reports are based on the assumption all L&Is are VALID unless a software or hardware malfunction, the environment, or erroneous personnel action is identified. Those indicators must be able to be detected by site personnel.

##### 2-2. (U) Definition of Terms:

###### a. (U) Use these terms to pass the system report to the MWC:

(1) (U) FALSE. Investigation is complete and in the judgment of operations personnel, the warning data was generated by sensor hardware or software malfunction, personnel error, or environment. (The system is malfunctioning.)

(2) (U) UNDER INVESTIGATION. Preliminary investigation reveals the warning data may or may not have been generated by sensor hardware or software malfunction, personnel error, or environment; investigation is continuing. (It cannot be determined how the system is performing.)

(3) (U) VALID. Investigation is complete and, in the judgment of operations personnel the warning data was not generated by sensor hardware or software malfunction, personnel error, or environment. (The system is working properly.)

###### b. (U) Use these terms during situations where a specific system report does not apply:

(1) (U) All Clear. Only used in response to MWC-initiated system reporting. Investigation is complete and no L&Is exist which have not been

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previously system reported. If an L&I does exist which has not been previously system reported, the site initiates system reporting procedures.

(2) (U) Cancel System Reporting. If the site determines at any time they have erroneously implemented system reporting with the MWC, it responds, "cancel system reporting," and briefly explains the problem.

## (U) Section B - Requirements

### 2-3. (U) Initiation:

a. (U) Regardless of the site OPSCAP, the site immediately initiates system reporting with the MWC when an L&I is generated or when directed by the MWC. System reporting is not initiated for L&Is deliberately generated as a result of:

(1) (U) Off-line maintenance activities (preventive maintenance (PM) or corrective maintenance (CM)) unless the L&I is inadvertently sent to the MWC.

(2) (U) Site simulation media activity, unless an L&I is inadvertently transmitted to the MWC.

(3) (U) Planned tests precoordinated with the MWC when the MWC expects to receive L&I messages in accordance with the test plan.

b. (U) When an L&I is generated the site immediately contacts the MWC and states "This is (site tactical name), standby for system reporting, have you received an L&I?" If the MWC has not received the L&I, implement VOICETELL procedures after the system report is passed.

c. (U) When system reporting is implemented by the MWC, the CMDR checks to see if the system has generated an L&I. If the site generated an L&I simultaneously with or just after MWC's call, the CMDR states "(Site tactical name) has just generated an L&I, standby for a system report." For this situation, the CMDR's 1-minute time constraint begins at the time the L&I is generated. If the site has not generated an L&I, the CMDR passes "All Clear."

2-4. (U) Investigation. Following L&I generation, the site immediately initiates an investigation on site to determine if equipment, environment, or personnel error caused the L&I.

a. (U) Source Polling. These work centers are polled for system status during system reporting:

(1) (U) PAVE PAWS - computer maintenance, radar maintenance, computer operations, job control, and the missile warning operations center (MWOC).

(2) (U) Cavalier - Radar Tactical Director (RTD) and the Data Processor Maintenance Director (DPMD).

(3) (U) Eglin - job control, Computer Operations Room Display (CORD), and the MWOC.

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b. (U) Investigation Criteria. Site investigate system performance by reviewing equipment status, environment indications, and personnel actions. Make sure the criteria for each of these areas are fully defined in the site operating procedures.

(1) (U) When reviewing the environment, sites do not attribute the presence of electromagnetic interference as a cause of false L&I generation. Interference may be indirectly related to site system report determination in that it may cause hardware and software malfunction and degradation. It is the hardware and software malfunction; however, that is considered when determining a system report. Also, the presence or absence of satellites (tracking and impact prediction (TIP) satellites especially) do not influence the CMDR when determining a system report. These two criteria are not verifiable by the CMDR.

(2) (U) Phased array sensors follow these requirements when conducting a system report investigation:

(a) (U) Check appropriate console displays to ensure an impacting object is being tracked as a result of L&I message generation.

(b) (U) Eglin ignores L&I data logic.

(c) (U) Review equipment status and check for erroneous personnel action.

(d) (U) PAVE PAWS monitor 45-second track time, L&I data logic, and bent track criteria.

c. (U) During source polling the CMDR is told what malfunction, if any, has been found and receives an assessment from the work center as to whether the malfunction caused or may have caused the L&I. The ultimate assessment is the CMDR's responsibility and the CMDR should receive as much information as possible during the system report investigation.

2-5. (U) Determination. Based on the results of the investigation, the CMDR determines a site system report and passes it to the MWC by hotline or FLASH precedence within 1-minute following generation or MWC direction.

a. (U) Judgment. Judgment is critical in determining the correct system report. For SLBM sensors, judgment is based on specific criteria established in the site operating procedures. The CMDR does not deviate from established criteria; however, if situations occur which have no criteria established to address the situation, the CMDR uses his or her judgment in determining a system report.

b. (U) Multiple Events. For multiple L&I events, the system reporting voice line remains open until terminated by MWC. However, when data lines are operational only changes need be passed after the initial valid or false system report, unless otherwise directed by the MWC.

c. (U) Changing a System Report. If the CMDR passes a VALID system report and later determines a condition exists that most likely caused false L&Is, he

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or she immediately updates the VALID to FALSE if the condition is associated to all L&Is generated. If any of the previous L&Is are determined to still be VALID, the CMDR maintains the VALID system report. If the CMDR originally passes a system report and later receives information that directs the system report to be changed, the CMDR must indicate to the best of his or her ability how many L&Is are VALID and FALSE when passing the system report. This situation should seldom occur but the site must be prepared to provide as accurate data as possible to the MWC.

d. (U) VALID System Reports. VALID system reports are passed when a sensor has completed an investigation, determined an L&I was generated, and was unable to find any malfunctions within the system that may have erroneously caused the generation.

e. (U) UNDER INVESTIGATION System Reports. UNDER INVESTIGATION system reports are passed when a site has completed the preliminary investigation and sources of data (hardware, software, environment, or personnel) exist which could cause erroneous generation of an L&I message, but the site is not certain the L&I message was generated by these sources and investigation is continuing. The site does not pass UNDER INVESTIGATION unless sources of data which could cause an erroneous L&I are known to exist and site personnel cannot yet judge if the L&I was actually caused by data from these sources. If UNDER INVESTIGATION is passed, the site maintains voice contact with the MWC; updates the report immediately when it changes or within 1 minute after directed by the MWC; and continues the investigation until VALID or FALSE is passed or until the MWC terminates system reporting. Loss of information sources does not in itself justify reporting UNDER INVESTIGATION. If, at any point in the investigation, the MWOC is denied one or more sources of information normally considered, the report is based on all the information available within the MWOC in the first minute following the event or request.

f. (U) FALSE System Reports. FALSE system reports are passed when a situation exists which most likely caused an erroneous L&I. Each site establishes a list of malfunctions known to have caused L&Is and malfunctions theoretically capable of causing L&Is. This list is based on an analysis performed by system analysts and experts and is the primary documentation for FALSE system report determination.

g. (U) L&I Generation During Software Testing. Much of the system software is currently tested on the real-time system. During these test periods simulation media is often used. Personnel must closely monitor the system during these periods of testing. If the system has been declared OPSCAP RED for software testing that affects threat evaluation and processing, the CMDR determines a FALSE system report for any real L&Is generated. This determination is made based on the unreliability of the software.

2-6. (U) System Report Explanations and Follow-up Reporting. When a site passes a FALSE or UNDER INVESTIGATION system report to the MWC, the CMDR passes a brief explanation of his or her system report. If at any time during system reporting the MWC requests additional information, the CMDR responds immediately. Mission critical actions; such as system restoral, should not be interrupted.

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2-7. (U) VOICETELL. If L&Is are not received by the MWC over data lines (for example, SPOC in control, data line failure, and so forth), the site passes L&I information using these formats:

a. (U) For missile warning event:

(1) (U) Site.

(2) (U) Number of missiles (cumulative). On subsequent events, pass only if changed.

(a) (U) For PAVE PAWS, pass total of threat and nonthreat missiles.

(b) (U) For Cavalier, pass number of reentry vehicles (RV) cumulative.

(c) (U) For Eglin, pass total number of missiles.

(3) (U) Site system report. On subsequent events, pass only if changed.

(4) (U) Impact location to include latitudes and longitudes.

(5) (U) Earliest impact time. On subsequent events, pass only if changed.

(6) (U) Launch origin coordinates. Cavalier reports selected targets for attack characterization (STAC) numbers, or impact coordinates if no STAC (see figure 2-1).

b. (U) On request by the MWC the site, if capable, passes launch times. Cavalier reports target classes under attack and next impact times for CONUS and Washington DC, as requested.

c. (U) The following information is also displayed at Cavalier and is available on MWC request:

(1) (U) Time of next CONUS impact.

(2) (U) Time of next Washington DC impact.

(3) (U) Number of impacts (RV) for these target classes (see figure 2-1):

(a) (U) Class 1 - Urban and industrial locations.

(b) (U) Class 2 - Missile fields.

(c) (U) Class 3 - Bomber and tanker bases.

(d) (U) Class 4 - Command, control, and communications (C3) locations.

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(e) (U) Class 5 - National Command Authorities (NCA).

(f) (U) Class 6 - All other targets.

(4) (U) Number of SLBMs and ICBMs in a raid.

d. (U) When directed by the MWC or SPOC to "go abbreviated," use this format for each L&I:

(1) (U) Impact point (latitude and longitude) or country. Perimeter Acquisition Radar Attack Characterization System (PARCS) reports STAC numbers or impact coordinates per a(4) above.

(2) (U) Impact time for each L&I message reported.

(3) (U) Other data as requested by the MWC or SPOC. This data may include general launch locations or exact launch points.

## 2-8. (U) System Report Termination:

a. (U) When L&Is are no longer in coverage and no new L&I indications exist, the site advises the MWC by reporting "This is (site tactical name), we have no mission indications in the system." This statement terminates the reporting period. Any new L&I generation indications require reinitiation of system reporting. Previous system performance should not influence the new system report unless it can be associated to the new L&I generation; for example, do not carry over a system malfunction from the previous period unless it affects the L&Is in the current situation.

b. (U) When the MWC directs the site to cease system reporting, this also terminates the system reporting period.

2-9. (U) Site Status Reports. If loss of voice contact precludes passing a verbal system report, the CMDR transmits via AUTODIN a site status report using FLASH precedence immediately following system report determination. See chapter 6 for report specifics.

2-10. (U) Preplanned Launches. Preplanned launches which pass within the systems' coverages are treated as tests of the missile warning system. For sites with preplanned launches scheduled within their coverage, system reporting is implemented upon L&I generation. System reporting should be performed in accordance with requirements and procedures as established for any other event.

2-11. (U) Documentation. Each site maintains documentation outlining causes of erroneous L&Is for false system report determination. This is an analysis performed by system analysts and experts. Send a copy to HQ AFSPACECOM/DOBW and 1st Space Wing/DOO. Unit director of operations (DO) reviews analysis annually to ensure recent software or hardware changes have not affected the analysis results, and upon each software version release.

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STAC NUMBER	TARGET NAME	TARGET CLASSES					
		1 U/I	2 MSL	3 B/T	4 C&C	5 NCA	6 OTHER
b1							

Figure 2-1 ( ). Cavalier Selected Targets for Attack Characterization (STAC) Numbers (U).

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STAC NUMBER	TARGET NAME	TARGET CLASSES					
		1 U/I	2 MSL	3 B/T	4 C&C	5 NCA	6 OTHER
b1							

Figure 2-1. ( ) Continued (U).

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STAC NUMBER	TARGET NAME	TARGET CLASSES					
		1 U/I	2 MSL	3 B/T	4 C&C	5 NCA	6 OTHER
b1							

Figure 2-1. ( ) Continued (U).

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## Chapter 3

### INTERFERENCE (U)

#### (U) Section A - Concept

3-1. (U) General. Certain foreign governments are assumed to be continually probing the US electromagnetic environment to improve their knowledge of US capabilities and techniques. Their objectives are to achieve superiority in electronic warfare (EW) over US and allied forces during any phase of war or contingency and maintain the capability to cause peacetime incidents. Reports of meaoning, intrusion, jamming, and interference (MIJI) incidents indicate foreign forces are capable of navigation and communications deception as well as disruption of US electronic surveillance and weapon systems. Since US military forces depend heavily on using the electromagnetic spectrum, a concerted effort by enemy forces to disrupt the friendly use of the spectrum could seriously degrade operations, unless adequate counter-countermeasures are used.

#### 3-2. (U) Definition of Terms:

a. (U) Interference or Electromagnetic Interference (EMI). Any electromagnetic disturbance which interrupts, obstructs, or otherwise degrades or limits the effective performance of electronics or electrical equipment. It can be induced intentionally, as in some forms of electronic warfare, or unintentionally, as a result of spurious emissions and responses.

(1) (U) Internal EMI. Interference which originates internal to the sensor equipment.

(2) (U) External Known EMI. Interference external to the sensor equipment which is determined to originate from natural phenomenon or a known friendly source.

(3) (U) External Unknown EMI. Interference external to the sensor equipment originating from an unknown source.

b. (U) Electronic Countermeasures (ECM). Actions taken to prevent or reduce the effective use of the electromagnetic spectrum. This includes any electromagnetic energy intentionally directed against a site.

c. (U) Electronic Counter-Countermeasures (ECCM). Actions taken to ensure effective use of the electromagnetic spectrum despite the employment of ECM against the site.

d. (U) Meaoning. A system of receiving radio beacon signals and rebroadcasting them on the same frequency to confuse navigation. The meaoning stations cause inaccurate bearings to be obtained by aircraft or ground stations.

e. (U) Intrusion. The intentional insertion of electromagnetic energy into transmission paths in any manner with the objective of deceiving operators or causing confusion.

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f. (U) Jamming. The deliberate radiation, reradiation, or reflection of electromagnetic energy for the purpose of disrupting enemy use of electronic devices, equipment, or systems.

## (U) Section B - Requirements

3-3. (U) Interference Reporting. Accurate and timely reporting of all ECM activity of suspected unfriendly origin is essential. Likewise, reporting of interference from known or unknown external sources is essential if such interference is to be quickly resolved. Sites perform these two types of reporting:

a. (U) Verbal. Immediately notify the Missile Warning Center (MWC) by voice when experiencing interference (internal or external). No action of lesser priority should delay this reporting. Report site identification, receipt of interference, and the time detected. Report OPSCAP changes and any other pertinent information when determined or as they become available. Continue to update the MWC of any changes in the sites status while receiving interference and at the conclusion of the period.

b. (U) Written. Prepare a written MIJI report according to AFR 55-3, NAS Supplement 1. Interference resulting from scheduled sources, except when required for exercise purposes, need not be reported.

3-4. (U) Investigation Criteria. All sites perform both an internal and external investigation immediately upon receipt of interference, to locate the source of the interference. This entails checking for hardware malfunctions, scheduled ECM exercises, and any other transmission activities occurring in the area. Make sure site operating procedures identify specific investigation procedures. Immediately upchannel results of this investigation to the MWC. Site personnel continually monitor EMI during receipt.

3-5. (U) ECCM Employment Criteria. Site personnel employ ECCM to maintain maximum equipment operability. The primary objective is to maintain detection capability. Although most systems have predesignated ECCM features built into the system, personnel must continue to improve site detection capability even if OPSCAP does not change. Avoid excessive use of ECCM actions when they unnecessarily degrade the sensor's detection capability.

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Chapter 4

OPERATIONAL CAPABILITY (OPSCAP) (U)

(U) Section A - Concept

4-1. (U) General. In order to maintain maximum warning and space surveillance coverage, it is imperative to provide maximum global coverage. Site system status must be current at the Missile Warning Center (MWC) and Space Surveillance Center (SSC).

4-2. (U) Definition of Terms:

a. (U) OPSCAP. An assessment of the capability of a site to perform its missile warning and space surveillance missions.

b. (U) OPSCAP Color Codes. Site OPSCAP is expressed by color codes as follows:

(1) (U) GREEN. Little or no loss of warning or space surveillance capability.

(2) (U) YELLOW. Significant loss of warning or space surveillance capability.

(3) (U) RED. Complete or nearly complete loss of warning or space surveillance capability.

c. (U) Radar and Computer Status. The radar and computer status covers sensor degradation to mission capabilities due to essential equipment failures.

d. (U) Environment Status. Environment status covers sensor degradation to missile warning and space surveillance capabilities due to EMI, ECM, blanking, or natural phenomenon; for example, aurora, ducting, clutter, and so forth. Environment color codes are interpreted as follows:

(1) (U) GREEN. Little or no loss of missile warning or space surveillance capabilities due to environment. b1

(2) (U) YELLOW. Significant loss of missile warning or space surveillance capabilities due to environment. b1

(3) (U) RED. Complete or nearly complete loss of missile warning or space surveillance capabilities due to environment. b1

e. (U) Communications Status. Communications status is a measure of a site's capability to provide timely missile warning and space surveillance information to the command and control agency.

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f. (U) Downtime. The time during which the site is OPSCAP RED or YELLOW.

g. (U) Scheduled Maintenance. Any preventive maintenance scheduled under ADCOMR 55-40(S).

h. (U) Unscheduled Maintenance. Any corrective maintenance required to return the site from a RED or YELLOW status (caused by unexpected failure) to a GREEN status.

i. (U) Reportable Downtime. Any RED or YELLOW period which exceeds 2 minutes.

## (U) Section B - Requirements

4-3. (U) OPSCAP Reporting. Site OPSCAP is the worst case of equipment status (radar or computer), environmental status, and communications status, as they affect both the missile warning and space surveillance missions. The site OPSCAP reflects the missile warning capability; however, the site also reports a space surveillance capability.

a. (U) The missile warning or site OPSCAP is reported to the MWC when any outage affecting the missile warning capability is expected to exceed or exceeds 2 minutes. Site personnel report the outage, cause, and estimated time of return to operation (ETRO) to the MWC using secure means. Do not report outages not expected to exceed 2 minutes.

(U) Note: The fact that a missile warning sensor is OPSCAP RED or YELLOW is classified SECRET. The cause for an outage, ETRO, and recall time are classified SECRET regardless of the duration. Once a sensor has returned to OPSCAP GREEN, duration and cause become UNCLASSIFIED. Do not report outages not expected to exceed 2 minutes.

b. (U) The space surveillance OPSCAP does not necessarily affect the missile warning OPSCAP; however, missile warning OPSCAP does affect space surveillance OPSCAP. Report space surveillance OPSCAP when an outage is expected to exceed or exceeds 2 minutes. See NASR 55-12(S).

c. (U) The site commander (CC), DO, or CMDR declares the site OPSCAP RED or YELLOW if a situation exists where the probability of false L&I generation is significantly increased, or where he or she feels the sensor's ability to perform its assigned missions are degraded.

d. (U) PAVE PAWS determines site OPSCAP using the worst case status from these four subsystems:

(1) (U) Radar. Determine status by taking the worst case of the equipment status identified in figure 4-1. A radar controller (RCL) from the computer subsystem, and a frequency time standard (FTS) and array logic unit (ALU) from the radar subsystems form a single chain. Note: Failure of one of these components causes the entire chain to be non-operational.

(2) (U) Computer. Determine status by taking the worst case of the equipment status identified in figure 4-2.

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(3) (U) Environment. Determine status by taking the worst case of blanking and interference levels from figure 4-3.

(4) (U) Communications. Determine status by taking the worst case of communications capabilities from figure 4-4. This figure applies when the MWC is the command and control agency.

(a) (U) Consider all outages, regardless of the source (site, line, or MWC), when determining communications status.

(b) (U) Consider data lines operational when grounded if the expected recall is less than 2 minutes. If recall cannot be accomplished within 2 minutes, consider the data lines non-operational when the outage is recognized.

(c) (U) Consider voice lines operational if voice contact can be established with the command and control agency within 2 minutes. If contact cannot be established, the voice lines are non-operational when the outage is recognized.

(d) (U) Report AFSATCOM outages to the command and control agency verbally at the time of occurrence and written in the daily operations report in the "remarks" section.

(e) (U) Report SAC, NMCC, and ANMCC dual data link outages to the command and control agency at the time of occurrence.

(f) (U) Determine communications status as follows when the SPOC or RAPIER is in command and control:

1. (U) Communication status is GREEN if any means of voice communication is operational between the site and the SPOC or RAPIER.

2. (U) Communication status is RED if no means of voice communication is operational between the site and the SPOC or RAPIER.

e. (U) Cavalier determines site OPSCAP using the worst case from these three subsystems:

(1) (U) Radar. Determine status by taking the worst case of the equipment status identified in figure 4-5.

(2) (U) Computer or Data Processor System (DPS). Determine status by taking the worst case of the equipment status identified in figure 4-6. This status is also determined by the type of program loaded into the DPS. The DPS color status (due to program load) is as follows:

(a) (U) If on an approved tactical load module (TLM), then DPS is GREEN.

(b) (U) If on an unapproved TLM, then DPS is RED.

(c) (U) If the DPS is version loaded (patched via card deck) against any TLM, then DPS is RED.

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(3) (U) Communications. Determine status by taking the worst case of communications capabilities from figure 4-4. This figure applies when the MWC is the command and control agency.

(a) (U) Consider all outages, regardless of the source, when determining communications status.

(b) (U) Consider data lines operational when grounded if the expected recall is less than 2 minutes. If recall cannot be accomplished within 2 minutes, consider the data lines non-operational when the outage is recognized.

(c) (U) Consider voice lines operational if voice contact can be established with the command and control agency within 2 minutes. If contact cannot be established, consider the voice lines non-operational when the outage is recognized.

(d) (U) When a warning data link (PACS) outage occurs, the CMDR queries the MWC to determine if a link swap should be accomplished. (When the warning link is down and the space surveillance link is operational, warning data is automatically transmitted over the space surveillance link and displayed at the SSC.)

(e) (U) Communications status is determined as follows when the SPOC or RAPIER is in command and control:

1. (U) Communication status is GREEN if any means of voice communication is operational between the site and the SPOC or RAPIER.

2. (U) Communication status is RED if no means of voice communication is operational between the site and the SPOC or RAPIER.

f. (U) Eglin determines site OPSCAP using the worst case status from these three subsystems:

(1) (U) Radar and Computer Equipment. Determine status by taking the worst case of the equipment status identified in figure 4-7.

(2) (U) Environment. Determine status by taking the worst case of blanking in effect and environmental effect on equipment status. When quarters are used, these criteria apply:

(a) (U) b1 - GREEN.

(b) (U) b1 - YELLOW.

(c) (U) b1 - RED.

(3) (U) Communications. Determine communications status by taking the worst case of communications capabilities from figure 4-4 when the MWC is in command and control.

(a) (U) Consider all outages, regardless of the source, when determining communications status.

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(b) (U) Consider data lines operational when grounded if the expected recall is less than 2 minutes. If recall cannot be accomplished within 2 minutes, consider the data lines non-operational when the outage is recognized.

(c) (U) Consider voice lines operational if voice contact can be established with the command and control agency within 2 minutes. If contact cannot be established, consider the voice lines non-operational when the outage is recognized.

(d) (U) Determine communication status as follows when the SPOC or RAPIER is in command and control.

1. (U) Communication status is GREEN if any means of voice is operational between the site and the SPOC or RAPIER.

2. (U) Communication status is RED if no means of voice communication is operational between the site and the SPOC or RAPIER.

4-4. (U) Suspected or Unconfirmed Outages. Sites report worst case (YELLOW or RED) if suspected degradation is under investigation. It is better to tell users that degradation may exist than allow an actual degradation to go unreported. If not certain whether operability is GREEN or YELLOW, report YELLOW. If it is not known whether operability is GREEN, YELLOW, or RED, report RED. After reporting worst case status, the site continues its investigation. If the investigation reveals the actual status is different, the site cancels the RED or YELLOW period and reports actual status. If degradation is confirmed, downtime reported in the daily operations report (DOR) starts from the beginning of the degradation. RED and YELLOW periods later cancelled are not reported as outages in the DOR, unless the suspected outage is in progress at the end of the reporting period. If such an outage is later cancelled, explain this in the next DOR.

## 4-5. (U) Scheduling Downtime:

a. (U) Scheduling. Request, schedule, and approve all planned downtimes which are expected to exceed 2 minutes. Reference ADCOMR 55-40(S).

b. (U) Approval for Downtime. The MWC approves all scheduled maintenance that degrades the site OPSCAP. The site requests initial approval from the MWC for all scheduled downtime 30 minutes before scheduled start time, and final approval 5 minutes prior to start time. If the MWC disapproves, site personnel reschedule the downtime. The MWC may recall the site from downtime due to tactical operational requirements.

c. (U) Downtime Communication Configuration. Data links are inhibited during periods of scheduled OPSCAP RED downtime, periods of OPSCAP RED corrective maintenance (CM), when simulation is in the system (on-line and off-line), conditions where false events could be released and when directed by the MWC, unless an end-to-end test configuration requires they be operational.

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4-6. (U) Redundancy Reporting. PAVE PAWS and Eglin report the status of key redundant equipment to the MWC. Make sure site operating procedures define specific reporting procedures and criteria.

4-7. (U) Blanking Reporting. PAVE PAWS report activation and deactivation of all site blanking to the MWC. Ensure site operating procedures define specific reporting procedures and criteria.

4-8. (U) Operability Tests. Sites perform the following operability tests to confirm the site's missile warning and space surveillance operability:

a. (U) PAVE PAWS. To test the early warning surveillance fence processing algorithms and satellite versus missile discrimination test, the site runs a simulation test once every 24-hour period. To test the on-line radar and computer hardware, the site ensures at least one satellite is tracked on each face that meets tasking requirements once every 12 hours. Log this information in the MWOC log as a single entry titled "operability verification." If any of these requirements are not met on their first scheduled attempt, schedule another attempt. If the system again fails to acquire the scheduled satellite and/or generate L&Is from a simulation tape, the CMDR uses his or her judgment to determine if the system is malfunctioning or if some other problem exists; for example, old orbital element set (OES), loss of satellite catalog, and so forth. If the CMDR determines the missile warning or space surveillance mission is degraded, he or she determines worst case OPSCAP until the investigation identifies the problem and corrective action is taken.

b. (U) Cavalier. To test system performance of attack characterization and missile warning, the site conducts a high-traffic data processing system exercise (DPSE) system readiness verification (SRV) with the counterforce exercise (AT-1) and a low-traffic DPSE SRV with the DPSE II exercise. The midshift CMDR conducts a force exercise every other Wednesday. The midshift CMDR conducts the DPSE II each Wednesday. Contractor system analysis personnel perform analysis and evaluation of SRV data. When analysis is complete, log results in the MWOC log.

c. (U) Eglin. To test the SLBM warning algorithms, the site conducts a satellite operational check (SATOC) during each hour. Log results in the MWOC log. If a valid SATOC is missed, the CMDR determines OPSCAP RED. If three consecutive valid SATOC misses occur, the CMDR declares the SLBM and space OPSCAPs RED and directs the on-call programmer to check out the system. Declare the site operational when a SATOC is successfully tracked.

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UNITS AVAILABLE (RADAR) (U)			
SUBSYSTEM	GREEN	YELLOW	RED
(U) General Purpose Signal Processor (GPSP) (Otis and Beale only)	3		0,1,2
(U) Signal Processor (SPR) (Eldorado and Robins only)	1,2		0
(U) *Array Logic Unit (ALU)	1,2	-	0
(U) *Frequency Time Standard (FTS)	1,2	-	0
(U) Receiver (REX)	2	1	0
(U) Exciter (REX)	1,2	-	0
(U) Array Group Driver (AGD)	2	1	0
(U) Array Face	2	1	0
(U) System Sensitivity Index (SSI) (Otis and Beale only)	b1	b1	b1
(J) System Sensitivity Index (SSI) (Eldorado and Robins only)	b1	b1	b1
*(U) The failure of one of each unit from opposing radar chains causes the site to be OPSCAP RED.			

Figure 4-1. ( ) PAVE PAWS Radar Status (U).

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UNITS AVAILABLE (COMPUTER)			
SUBSYSTEM	GREEN	YELLOW	RED
CYBER	1,2	-	0
Radar Controller (RCL)	1,2	-	0
System-17 (Otis and Beale only)	3,2	1	0
Consoles in TOR	3,4,5,6	2	0.1

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Figure 4-2. (U) PAVE PAWS Computer Status (U).

ENVIRONMENTAL STATUS (U)			
CONDITION	GREEN	YELLOW	RED
(U) Blanking for Entire System Coverage	b1	b1	b1
(U) Interference Level (Otis and Beale only)	b1	b1	b1
(U) Interference Level (Eldorado and Robins only)	b1	b1	b1

Figure 4-3. ( ) PAVE PAWS Environmental Status (U).

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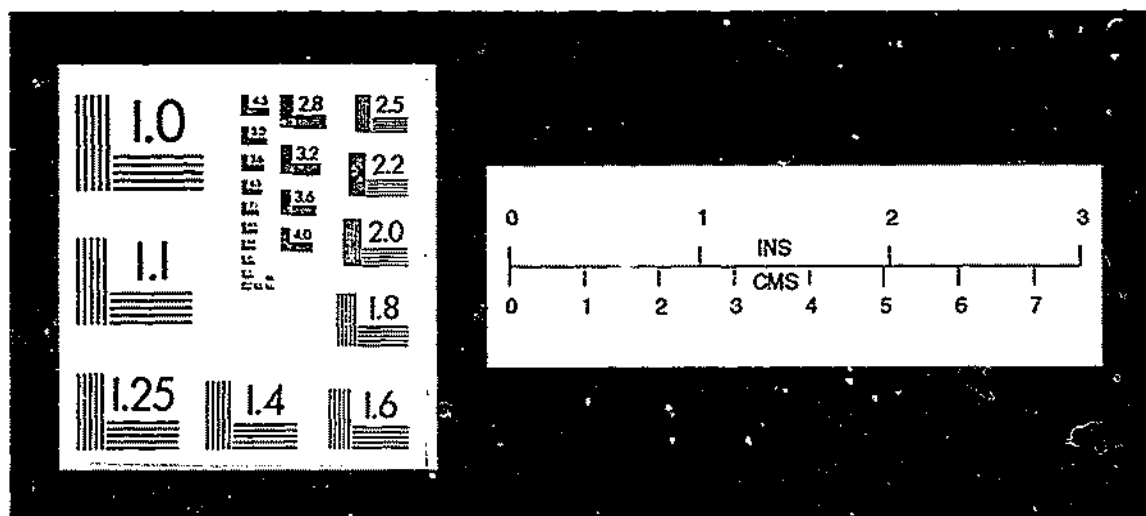
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COMMUNICATIONS STATUS			
MEDIUM	GREEN	YELLOW	RED
Data Lines	At least one data line is "up" to the command and control agency	Both data lines are "down" to the command and control agency	Both data lines are "down" to the command and control agency
	- and -	- or -	- and -
Voice	Any voice comm is operational to the command and control agency	All means of voice comm non-operational to the command and control agency	All means of voice comm non-operational to the command and control agency

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Figure 4-4. (U) Site Communications Status (U).

UNITS AVAILABLE (RADAR)			
SUBSYSTEM	GREEN	Yellow	Red
Digital Data Group	At least simplex operation	-	Loss of DDG interface
Exciter	One exciter and the power distribution unit operational	-	Loss of exciters or power distribution unit
Relative Sensitivity	Class A test results report "operational" for relative sensitivity	Class A test results report "degraded" for relative sensitivity	Class A test results report "down" for relative sensitivity
Signal Processor/TI Waveform Generator	Signal Processor and one waveform generator available	-	Loss of signal processor or waveform generators

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Figure 4-5. (U) Cavalier Radar Status (U).

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COMPUTER STATUS			
SUBSYSTEM	GREEN	YELLOW	RED
Processor Units (PU)	At least 3 of PU1 thru PU5 available  - and -	At least 2 PUs available	Less than 2 of PU1 thru PU5 available as sensor performance is affected  - or -
Program Stores (PS)	Any 5 of PS0, PS1, PS2, PS3, PS6, and PS8 are available  - and -	-	Less than 5 of PS0, PS1, PS2, PS3, PS6, and PS8 are available  - or -
Variable Stores (VS)	Any 12 of VS0, VS1, VS2, VS3, VS6, VS7, VS8, VS9, VS10, VS11, VS12, VS14 and VS15 are available  - and -	-	Less than 12 of VS0, VS1, VS3, VS6, VS7, VS8, VS9, VS10, VS11, VS12, VS14, and VS15 are available  - or -
Precision Frequency	1, 2, or 3 oscillator chains available  - and -	-	0 oscillator chains available  - or -
Input/Output Controller (IOC)	1 or 2 subsystems available	-	0 subsystems available

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Figure 4-6. (U) Cavalier Data Processor System Status (U).

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RADAR AND COMPUTER EQUIPMENT STATUS (U)		
EQUIPMENT	INOP	OPSCAP STATUS
(U) Power	ALL	R
(U) Transmitter Array	b1	R
(U) b1	-	Y
(U) b1	-	R
<p>PERCENT TRANSMIT MODULE FAILURES vs SYSTEM DEGRADATION (CS)</p> <p>b1</p>		
(U) 5.5kv Power Supply	b1	R
(U) 3.5kv Power Supply	b1	R
(U) 500 Volt Power Supply	b1	R
(U) 4.2 Mo Power Supply	b1	R
(U) Screen Modulator Power Supply	b1	R
(U) Mo Screen Modulator	b1	Y
	b1	R

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EQUIPMENT	# INOP	OPSCAP STATUS
(U) TX Screen Modulator	b1	Y
	b1	R
(U) MOIPA	b1	R
(U) Divider Driver Power Supply	b1	R
(U) Grid Modulator Power Supply	b1	R
(U) Trigger Distribution Console	b1	R
(U) Modulator Control Console	b1	R
(U) Transmit Array Cool Air Handlers	b1	R
(U) Receiver Array	1	R
(U) b1	-	Y
(U) b1	-	R

PERCENT RECEIVE MODULE FAILURES  
VS SYSTEM DEGRADATION (25)

b1

Figure 4-7. ( ) Continued (U).

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EQUIPMENT	# INOP	OPSCAP STATUS
(U) Local Oscillator	b1	Y
(U) Divider Driver Pwr Supply	b1	R
(U) Air Conditioning Cabinet Cool Air Handlers	b1	R
(U) Radar Interface Control Equipment (RICE)	b1	R
(U) Configuration Selector	b1	R
(U) Line Driver	b1	R
(U) Peripheral Equipment Switchboard	b1	R
(U) Maintenance and Operations Console	b1	R
(U) Signal Processor	1	R
(U) Search and Track	b1	R
(U) System Frequency Generator (SFG)	b1	R
(U) 360/65I Computers	2	R
(U) Reader 2540/1501	b1	-
(U) Printer 600 L PM 1403	b1	-
(U) Mohawk Disk Drive (C-D String)	b1	R
(U) Disk Drive 2311 (250/290)	b1	-
* (U) Display TOD (2250)	b1	R
* (U) Magnetic Tape Drives	b1	*G
(U)* - If CCAD is not available, then one additional tape drive is required.	b1	*Y
(U) SLBM Fence Power	b1	Y
(U) b1		G
(U) b1		Y
(U) b1		R
(U) Ability to track b1	b1	R

Figure 4-7. ( ) Continued (U).



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## Chapter 5

### SPACE SURVEILLANCE (U)

5-1. (U) General. PAVE PAWS, Cavalier, and Eglin are collateral sensors supporting the space surveillance mission. Each site is responsible to USCINCSpace through the Space Surveillance Center (SSC) for the detection, tracking, and reporting of metric observations and SOI data in accordance with system requirements.

5-2. (U) Mission Priority. Chapter 1 defines the space surveillance mission priority for PAVE PAWS, Cavalier, and Eglin. At Cavalier, the SPACETRACK (manual) OVERRIDE mode is used only during local (low traffic) exercise tape runs to not interrupt the space surveillance mission. If a threat detected alert is displayed while in SPACETRACK OVERRIDE, the CMDR immediately deactivates SPACETRACK OVERRIDE.

5-3. (U) Requirements. NASR 55-12(S) defines space surveillance requirements for each sensor.

5-4. (U) Mission Conflicts. The CMDR contacts the MWC to resolve any conflicts between the missile warning and space surveillance missions. In case of conflict, the MWC may authorize space surveillance support on a case-by-case basis. When sites receive a directive to support space surveillance over missile warning requirements, authentication via AKAA 2001 is required if secure communication is not available.

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## Chapter 6

### REPORTS (U)

6-1. (U) General. PAVE PAWS, Cavalier, and Eglin, submit, as a minimum, the following reports in the directed formats and time requirements. Ensure site operating procedures address specific information about content for applicable reports.

6-2. (U) Daily Operations Report (DOR), RCS: AF(SPACECMD-DOM(D)7712. Each site submits a DOR covering the period 0600Z-0600Z during Mountain Daylight Time (MDT) and 0700Z-0700Z during Mountain Standard Time (MST). Submit the DOR during MINIMIZE; Emergency Status Code: C-2.

a. (U) Addressees. Within 2 hours after closeout time, send report to at least:

(1) (U) Action: HQ AFSPACECOM PETERSON AFB CO//DOMW/DOSS//  
HQ AFSPACECOM CHEYENNE MTN COMPLEX CO//LKRS//  
SOSC PETERSON AFB CO//DOCP//  
HQ USSPACECOM PETERSON AFB CO//J3MM//  
HQ USSPACECOM CHEYENNE MTN COMPLEX CO//J3MO//  
HQ USSPACECOM SPOC PETERSON AFB CO//J3CP//1SPACE  
WG/D00//

(2) (U) Information: PAVE PAWS units should info other PAVE PAWS units.

b. (U) Precedence. Use:

(1) (U) Action: Immediate (00).

(2) (U) Information: Priority (PP).

c. (U) Format. PAVE PAWS, Cavalier, and Eglin submit DORs in the following format (see figure 6-1):

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CLASSIFICATION					
SUBJ: DOR DTG TO DTG MONTH YR RCS: AFSPACECOM-DOM(D)7712 (U)					
1. ( ) OPERATIONAL CAPABILITY:					
	OPSCAP	TIME OUT	TIME IN	DURATION	REASON
A. ( ) SLBM	RED/YEL	## ####Z	## ####Z	## ##	RMK X
B. ( ) SPACE	RED/YEL	##/####Z	##/####Z	##:##	RMK X
2. ( ) OUTAGE SUMMARY:					
	PCT YEL	PCT RED	HOURS	MIN	
A. ( ) SLBM	##.##	##.##	##	##	
B. ( ) SPACE	##.##	##.##	##	##	
3. ( ) THREAT SUMMARY:					
4. ( ) REMARKS:					
5. ( ) DATA LINK OUTAGES: (CAVALIER ONLY)					
	TIME OUT	TIME IN	DURATION	REASON	
A. ( ) 2XJF	##/####Z	##/####Z	##:##	RMK	X
B. ( ) 2XJG	##/####Z	##/####Z	##:##	RMK	X

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Figure 6-1. (U) DOR Format (U).

c. (U) Content. Include:

(1) (U) A chronological listing of confirmed outages or suspected outages in progress which cause a site missile warning or space surveillance OPSCAP change. Report OPSCAP (RED or YELLOW), start, end, duration of each outage, and associated remarks which details cause and corrective actions pending, in progress, and completed.

(2) (U) An outage summary consisting of the percentages of total RED and YELLOW time with corresponding total hours and minutes as they pertain to their respective missions.

(3) (U) A detailed threat summary outlining L&I generation from unscheduled missile warning events and preplanned launches.

(4) (U) Remarks, as required, concerning details on the outages, periods of interference, date-time groups (DTG) of message as a result of

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special events, space surveillance items of interest, conditions requiring higher headquarters assistance, corrections and additions to previous DORs, and any other items the CC, DO, or CMDR feels merit reporting.

(U) Note: Cavalier reports data link outages for the 2XJF and 2XJG circuits.

6-3. (U) Site Status Report. If voice lines are RED with the command and control agency but AUTODIN is available, PAVE PAWS and Cavalier send a site status report immediately to HQ USSPACECOM CHEYENNE MTN COMPLEX CO//J3MO/J3SO// and HQ USSPACECOM SPOC PETERSON AFB CO//J3CP//. Eglin uses the chatter circuit in lieu of the site status report. No action of lesser priority should delay this reporting. Send the site status report by FLASH precedence if an L&I is generated; otherwise, use IMMEDIATE precedence. Until voice contact is restored, send follow-up site status reports each hour and as changes occur. Include:

- a. (U) Number of L&Is and site system report.
- b. (U) Interference data.
- c. (U) OPSCAP to include missile warning and space surveillance.
- d. (U) Remarks explaining the voice line outage, ETR0, and any other information which normally is passed to the MWC.

6-4. (U) JCS Reports. All sites submit these reports:

- a. (U) OPREP-3 BEELINE, HOMELINE, and PINNACLE (see SR 55-2).
- b. (U) OPREP-3 SAWOR (see SR 55-2).
- c. (U) HELPING HAND and COVERED WAGON (see AFR 207-1(C) and SR 55-2).
- d. (U) SITREPs 1 and 2 (see SR 55-2).
- e. (U) SPIREP and CIRVIS (see SR 55-2).
- f. (U) JADREP (see NR 55-15).
- g. (U) MIJI (see AFR 55-3 and NAS Supplement 1).
- h. (U) UNITREP (see AFR 55-15 and SR 55-2).

6-5. (U) Space Surveillance Reports. Report in accordance with NASR 55-12(S).

6-6. (U) Reports Control. Except for the Daily Operations Report (DOR), RCS: AFSPACECOM-DOM(D)7712, all verbal and written reports required by this regulation are exempt from RCS assignment according to AFR 700-11, paragraph 2-3h.

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## Chapter 7

### AUTHENTICATION (U)

7-1. (U) General. This chapter directs what authentication systems used by PAVE PAWS, Cavalier, and Eglin, and their requirements.

7-2. (U) TSEC KL-43. Use the KL-43 in accordance with NSM 55-19, Volume III(S).

7-3. (U) AKAA 2001. Use AKAA 2001 to authenticate operational directives and messages for which no other authentication system is designated. Challenge a verbal directive with the AKAA 2001 when its validity is in doubt. The MWC may challenge all operational traffic received over unsecure or nondirect telephone lines. Use AKAA 2001 in accordance with the directions provided on the cover of AKAA 2001.

7-4. (U) AKAC 431. The AKAC 431 is a voice code system used to communicate with the CMC, ASSC, or SPOC and the site when secure communications are not available and the urgency of the message precludes the use of secure hardcopy message traffic.

7-5. (U) AKAC 222. Use the 222 in accordance with NASR 55-12(S).

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## Chapter 8

## TOTAL EVACUATION (U)

8-1. (U) General. This chapter addresses requirements for total evacuation of PAVE PAWS, Cavalier, and Eglin.

8-2. (U) Evaluation Procedures. Totally evacuate when life-threatening situations exist; such as fire, sabotage, natural disasters, or life-endangering accidents; for example, poisonous fumes, explosions, and so on. Ensure site operating procedures include specific criteria to determine when total evacuation is to be implemented for both peacetime and increased readiness conditions.

a. (U) Peacetime <sup>b1</sup> . . . In peacetime, personal safety is paramount. Follow these procedures when evacuation is necessary:

- (1) (U) Notify the MWC that the building is being evacuated.
- (2) (U) Configure the system to ensure the least system damage.
- (3) (U) Ground data lines; unless directed otherwise by the MWC.
- (4) (U) Evacuate all personnel.

b. (U) Increased Readiness <sup>b1</sup> . . . In an increased state of readiness, maintaining critical warning coverage is paramount. Follow these procedures when total evacuation is necessary:

- (1) (U) Immediately evacuate nonmission-essential personnel if not already evacuated.
- (2) (U) Get MWC permission to evacuate mission-essential personnel.
- (3) (U) If the MWC grants permission to evacuate mission-essential personnel, ask the MWC whether or not the system and communications circuits should be left operational.
- (4) (U) Follow MWC direction.

(U) Notes: <sup>b1</sup> decides if a site should totally evacuate and if the sensor configuration <sup>b1</sup> for an evacuation.

c. (U) Following Evacuation. As soon as possible, the CMDR contacts the MWC via alternate means.

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OFFICIAL

MAURICE C. PADDEN  
Major General, USAF  
Commander

G. A. STANSELL  
Colonel, USAF  
Director of Administration

## SUMMARY OF CHANGES

Deletes reference to NORAD and updates procedures.

## DISTRIBUTION: X

### HQ NORAD/HQ AFSPACECOM/HQ USSPACECOM

DOM.....	30	NCZT.....	1
DOC.....	1	J3VE.....	1
DOP.....	1	J3MO.....	1
DOS.....	2	IGIY.....	1
SOSC.....	2	IGA.....	1
SPOC.....	1	SIO/SYA.....	1
NCCP.....	3	ACM.....	1
J3MM.....	2		

### Air Force Space Command Units:

6MWS/DO, Cape Cod AFS MA 02532-1419.....	3
7MWS/DO, Beale AFB CA 95903-5000.....	3
8MWS/DO, Eldorado AFS TX 76936-5000.....	3
9MWS/DO, Robins AFB GA 31098-5000.....	3
10MWS/DO, Cavalier AFS ND 58220-5000.....	3
20MWS/DO, Eglin AFB FL 32542-5000.....	3
1 Space Wg/DO/DOO/DOT/DOV (1 ea), Peterson AFB CO 80914-5001.....	4
1013CCTS/CTM, Peterson AFB CO 80914-5001.....	1

### Other:

HQ USAF/XOOR, Washington DC 20330-5000.....	1
OJCS NMCC, Washington DC 20330-5000.....	3
NMCC/J3 (E.A. Branch), Washington DC 20301.....	1
DIA, Washington DC 20301-6111.....	1
DCA-CCTC/C660, Room BE 685, Pentagon, Washington DC 20301.....	1
Alternate NMCC, Ft Ritchie MD 21719.....	1
NAVSPASUR/CO, Dahlgren VA 22448.....	1
OJCS/NEACP, Offutt AFB NE 68113-6338.....	2
HQ SAC/DOC/DOCW (1 ea), Offutt AFB NE 68113-5000.....	2
OLAH AFSPACECOM/XPWA, Hanscom AFB MA 01731-5000.....	1
ESD/OCZ/OCT/SCC (1 ea), Hanscom AFB MA 01731-5000.....	3
AUL/SE, Maxwell AFB AL 36112-5564.....	1
HQ AFCC/LGMBS, Scott AFB IL 62225-6001.....	1
Felec Services, Inc., Cavalier AFS ND 58220-5000.....	1

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HQ AFSCF/ROSR, Sunnyvale AFS CA 94088-3430.....1  
Sacramento ALC/MMCM, McClellan AFB CA 95652-5990.....1  
IGD (AFISC/DAP), Norton AFB CA 92409-7001.....1  
USCINCPAC, Camp H. M. Smith HI 96861-4495.....1  
3423 Technical Training Squadron (ATC), Peterson AFB CO 80914.....1  
Teledyne Brown Engineering, Colorado Springs Field Office, 1250 Academy  
Park Loop, Suite 40, Colorado Springs CO 80910.....1  
Science Applications, Inc., 2109 W. Clinton Ave, Ste 800,  
Huntsville AL 35805.....1  
2159ISS/LGMC, Eglin AFB FL 32542-6346.....1

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## GLOSSARY OF ABBREVIATIONS (U)

AFSATCOM	Air Force Satellite Communications
AFSPACECOM	Air Force Space Command
AGD	array group driver
ALU	array logic unit
AN/FPS-16	Army Navy Fixed Position Sensor (Identifier for Cavalier)
AN/FPS-115	Army Navy Fixed Position Sensor (Identifier for Beale and Otis)
AN/FPS-123	Army Navy Fixed Position Sensor (Identifier for Robins and Eldorado)
AN/FPS-85	Army Navy Fixed Position Sensor (Identifier for Eglin)
ASSC	Alternate Space Surveillance Center
AUTODIN	Automatic Digital Network
CC	commander
CD	command director
CINCNOAD	Commander in Chief, North American Aerospace Defense Command
CM	corrective maintenance
CMC	Cheyenne Mountain Complex
CMDR	Missile Warning Operations Center Crew Commander
CONUS	continental United States
CORD	Computer Operations Room Display
CP	command post
dB	decibel
DEFCON	defense readiness condition
DDG	digital data group
DMTS	diagnostic monitor test subsystem
DO	director of operations
DOR	daily operations report
DPMD	data processor maintenance director
DPS	data processor system
DPSE	data processor system exercise
DTG	date-time group
ECCM	electronic counter-countermeasures
ECM	electronic countermeasures
EMI	electromagnetic interference
ETRO	estimate time of return to operation
EW	electronic warfare
FTS	frequency time standard
GPSP	general purpose signal processor
ICBM	intercontinental ballistic missile
IOC	input/output controller
IODP	input/output data processor
L&I	launch and impact
MIJI	meaoning, intrusion, jamming, and interference
MOIPA	master oscillator intermediate power amplifier
MWC	missile warning center
MWOC	missile warning operations center
MWS	missile warning squadron
NORAD	North American Aerospace Defense Command
NTAS	NORAD Tactical Autovon System
OADR	originating agency determination required
OES	orbital element set

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OPlan	operation plan
OPSCAP	operational capability
PACS	PARCS Attack Characterization System
PARCS	Perimeter Acquisition Radar Attack Characterization System
PAVE PAWS	Phased Array Warning System
PM	preventive maintenance
PS	program store
PU	processor unit
RAPIER	rapid emergency reconstitution
RCL	radar controller
RICE	radar interface control equipment
RTD	radar tactical director
RV	reentry vehicle
RWOP	real-world operability program
SATOC	satellite operational check
SAWOR	space and warning operational report
SFG	system frequency generator
SITREP	situation report
SLBM	sea-launched ballistic missile
SOI	space object identification
SOSC	space operations support center
SPIREP	spot intelligence report
SPOC	space operations center
SPR	signal processor
SRV	system readiness verification
SSC	space surveillance center
SSCO	space systems console operator
SSI	system sensitivity index
SSN	space surveillance network
STAC	selected targets for attack characterization
TIP	track and impact prediction
TLM	tactical load module
TOD	tactical operations display
TRD	tactical requirements and doctrine
USSPACECOM	United States Space Command
VS	variable store

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